

REMARKS

Status

This Amendment is responsive to the Office Action dated May 31, 2007, in which Claims 1-2 and 4-9 and 12 were rejected, Claim 3 was objected to, and Claims 10 and 11 were allowed. No claims have been canceled; Claims 1, 3-10, and 12 have been amended; and no new claims have been added. Accordingly, Claims 1-12 are pending in the application, and are presented for reconsideration and allowance.

Allowable Subject Matter

Applicants thank the Examiner for the allowance of Claims 10 and 11.

Claim 3 is objected to as being dependent on a rejected base claim. As noted in the previous Amendment filed on February 16, 2007, Claim 3 has been rewritten in independent form as Claim 11. Claim 3 is dependent on Claim 1, and since Applicants believe that Claim 1 is patentable, Applicants have retained Claim 3 and it remains dependent on Claim 1.

Claim Rejection - 35 USC 103

Claims 1-2, 5-9 and 12 stand rejected under 35 USC 103 as being unpatentable over US Patent No. 5,164,993 (*Capozzi*) in view of US Patent Publication No. 2002/0172403 (*Doi*). As best understood, the Office Action's position is that *Capozzi* fails to specifically disclose extracting the anatomy region of the image as the diagnostically relevant region, but that "it was well known in the art of image processing" to extract regions of interest so that the irrelevant information can be ignored, as taught by *Doi*. This rejection is respectfully traversed.

The present invention is directed to a method of segmenting a radiographic image into diagnostically relevant and diagnostically irrelevant regions. The method includes the steps of generating an initial background map using an initial background left point, and detecting a foreground map of the image using the initial background map. As such, the present invention uses the

background to detect the foreground. The features claimed in Claim 1 are described generally on Page 6, lines 1-14.

Capozzi does not relate to segmenting a radiographic image into diagnostically relevant and diagnostically irrelevant regions. Rather, *Capozzi* is directed to automatic tonescale generation, as stated in the title. As described in Col. 1, lines 20-30, an image processing tone reproduction function (i.e., the tonescale or gradation curve) is used to map the image into viewable shades of grey for a useful output image. *Capozzi* describes a method and apparatus to generate an optimum output tonescale for digital images (Col. 5, lines 24-25). To accomplish this, *Capozzi* employs a histogram and Cumulative Distribution Function (CDF) (Col. 6, lines 23-36) to determine several points (Col. 9, lines 43-53). Using these points, a tonescale is constructed (Col. 9, line 67 through Col. 11, line 21). The tonescale can then be smoothed to eliminate slope discontinuities (Col. 11, lines 56-68).

Capozzi's automatic tonescale generation method is not segmentation of a radiographic image into diagnostically relevant and diagnostically irrelevant regions as claimed in Claim 1 since *Capozzi* does not generate a background map, does not detect a foreground map using the background map, and does not regenerate a regenerated background map.

Nor can *Capozzi's* smoothing step be equated with Claim 1's merging step since *Capozzi's* smoothing step is intended to eliminate slope discontinuities in the tonescale. As claimed in Claim 1, the diagnostically relevant anatomical regions are extracted by merging and then excluding the foreground and background regions. The present invention's Figures 10a and 10b show an example of the detected background and foreground regions, respectively, and Figure 10c is the sum/merge of the two.

Doi also does not teach or suggest these claimed features.

As set forth above, neither cited reference teaches or suggests claimed features of the invention. Therefore, Claim 1 is not obvious from the cited references, whether taken alone or in combination, and is therefore believed to be patentable.

Claims 2, 5-9, and 12 are dependent on Claim 1, and therefore include all the features thereof. For the reasons set forth above with regard to Claim 1, Claims 2, 5-9, and 12 are also believed to be patentable.

Claim Rejection - 35 USC 103

Claim 4 stands rejected under 35 USC 103 as being unpatentable over US Patent No. 5,164,993 (*Capozzi*) in view of US Patent Publication No. 2002/0172403 (*Doi*) and further in view of US Patent No. 6,212,291 (*Wang*). This rejection is respectfully traversed.

(Applicant notes that reference is made to *Jiang* and *Dewaele* in the Office Action on Page 4 (last paragraph) and Page 5 (last paragraph), but is of the understanding that Claim 4 is not rejected under *Jiang* or *Dewaele*.)

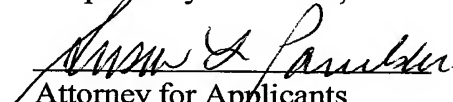
Claim 4 is dependent on Claim 1, and therefore includes all the features thereof. For the reasons set forth above with regard to Claim 1, Claim 4 is also believed to be patentable.

Summary

Should the Examiner consider that additional amendments are necessary to place the application in condition for allowance, the favor is requested of a telephone call to the undersigned counsel for the purpose of discussing such amendments.

For the reasons set forth above, it is believed that the application is in condition for allowance. Accordingly, reconsideration and favorable action are respectfully solicited.

Respectfully submitted,


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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Carestream Health, Inc. at 585/724-9490 or 585/724-9409.